Managed Care Diabetes Project

Baseline Report

Division of Medical Assistance

Medical Review of North Carolina, Inc.

February, 2000

Managed Care Diabetes Project

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Table of Contents

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Medical Review of North Carolina, Inc.

Managed Care Diabetes Project

Baseline Report

EXECUTIVE SUMMARY

BACKGROUND: Diabetes mellitus is the seventh leading cause of death in North Carolina and in the nation. Persons with diabetes in North Carolina have an eighty percent greater rate of death from stroke, more than twice the rate of death from coronary heart disease, and three times the rate of death from hypertensive heart disease compared to those without diabetes. In the United States, diabetes mellitus is the most important cause of lower extremity amputation and end stage renal disease, the major cause of blindness among working age adults, and a major cause of disability and premature mortality.

METHODOLOGY: Project quality indicators assess processes of care and intermediate outcome measures that facilitate early detection of diabetic complications and enable informed decisions regarding disease management: hemoglobin A1c (HbA1c) testing, HbA1c control, lipid profiles, low density lipoprotein cholesterol (LDL-C) control, nephropathy assessment and dilated eye exams.

Cases eligible for inclusion were diabetics enrolled in Medicaid managed care that had either two outpatient visits or one inpatient visit during calendar year 1998 (the study period), and were between the ages of eighteen and seventy-five. For all baseline cases, data were collected directly from the 1998 primary care provider medical record.

Project success will be measured by improvement over baseline performance on the project quality indicators. The goal for Medicaid organizations is to improve aggregate quality indicator performance by 10%.

RESULTS: The following table displays aggregate baseline results for the project quality indicators (measurable aspects of care). Complete information is provided in the body of the report.

Quality Indicator	A		B		C		D		E		F		G	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Hemoglobin (HbA1c) Testing	37	59	192	61	8	38	327	61	215	66	41	68	820	62
Poor HbA1c Control	37	65	192	61	8	75	327	60	215	55	41	49	820	59
Lipid Profile	37	43	192	31	8	50	327	37	215	35	41	41	820	36
LDL Cholesterol (LDL-C) Control	15	67	54	61	4	50	103	59	68	57	17	59	261	59
Nephropathy Assessment	35	26	183	20	6	33	298	14	194	21	37	11	753	18
Dilated Eye Exam	30	10	164	15	8	0	277	14	173	19	32	9	684	15

CONCLUSIONS: Aggregate baseline results reveal many opportunities for improvement in the primary care management of diabetes within Medicaid managed care. The high morbidity and mortality associated with diabetic complications may be prevented by improving performance on the Managed Care Diabetes Project quality indicators.

INTRODUCTION

Quality Improvement Organizations (QIOs), also known as Peer Review Organizations (PROs) strive to improve the processes and outcomes of health care. To achieve this goal, QIOs have conducted cooperative projects since 1994 as part of the Health Care Quality Improvement Program established by the Health Care Financing Administration[1]. Cooperative projects consist of collaborative efforts between QIOs and participating health care providers to improve the quality of health care provided to Medicaid beneficiaries. Projects rely on criteria called quality indicators, or measurable aspects of care, which are supported by practice guidelines and a consensus of respected health care professionals.

Managed Care Diabetes Project quality indicators are based upon the national Diabetes Quality Improvement Project (DQIP) and on Health Plan and Employer Data Information Set (HEDIS) diabetes related measures, which encompass all of DQIP except for blood pressure and foot exams. The DQIP indicators represent a common set of comprehensive, evidence-based measures supported by the American Diabetes Association (ADA), the Foundation for Accountability (FACCT), the National Committee on Quality Assurance (NCQA) and the Health Care Financing Administration (HCFA). In addition to four process measures that have been linked to patient outcomes, DQIP includes two intermediate outcome measures: control of hemoglobin A1c (HbA1c) and low density lipoprotein cholesterol (LDL-C).

Initial data abstracted for this project are referred to as "baseline." Upon receipt of baseline feedback reports, collaborating health plans are asked to develop improvement plans designed to improve the quality of care delivered to members with diabetes. Medical Review of North Carolina, Inc. (MRNC) will abstract data from a new set of medical records from each plan following implementation of improvement plans. This report depicts baseline data for your organization in comparison to all participating Medicaid organizations, (hereafter referred to as Medicaid Aggregate).

There are four main sections to the report:

- The **background** section explains the rationale behind the project.
- The **methodology** section describes project quality indicators and the system used to select the baseline sample and perform project data collection.
- The **results** section displays your organization-specific data along with comparative data from all participating Medicaid organizations through a series of tables and bar charts.
- The **conclusions** summarize baseline results and suggest goals for improving quality of care delivered to diabetic enrollees in managed care in North Carolina.

Following this report, references employed in project development are cited. The Appendix contains a list of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes used for case selection and the data collection instrument.

BACKGROUND

Diabetics are major consumers of health care because they require lifelong treatment. Under-treated diabetes results in many adverse consequences. In the United States, diabetes mellitus is the most important cause of lower extremity amputation and end stage renal disease, the major cause of blindness among working age adults, and a major cause of disability and premature mortality. Diabetes mellitus is an important risk factor for the development of many other acute and chronic conditions such as ketoacidosis, ischemic heart disease and stroke. In a large percentage of the diabetic population, diabetes will lead to major complications such as nephropathy, neuropathy and retinopathy over time, especially if hypertension, blood glucose levels and obesity are not controlled.

Diabetes is the seventh leading cause of death in North Carolina and in the nation[2, 3]. North Carolinians with diabetes have an eighty percent greater rate of death from stroke, more than twice the rate of death from coronary heart disease, and three times the rate of death from hypertensive heart disease compared to those without diabetes. In North Carolina, diabetes accounted for 14% of all hospitalizations in 1997 at a cost of about $1.4 billion[4].

Approximately 300,000 adults in North Carolina have been diagnosed with diabetes, and about 100,000 more may have the disease and not know it[5]. The burden of diabetes in our state is concentrated in older (65 - 74 years of age) residents[5].

METHODOLOGY

Quality Indicators

Quality indicators are quantitative measures of care that are related to improved patient outcomes. The quality indicators chosen for this project are consistent with DQIP and HEDIS 1999 diabetes related measures. Local adaptation, however, involved reporting of annual rates for all quality indicators, rather than the biennial rates accepted nationally for some of these quality indicators (described further below). All quality indicators use the denominator specified for the HEDIS 1999 Comprehensive Diabetes Care Measure[6].

1. Hemoglobin A1c (HbA1c) Testing

This process measure assesses the percentage of diabetes patients who have had at least one HbA1c test during the reporting year of 1998. HbA1c testing is fundamental to assessing the underlying control of the disease since it quantifies glucose control over the previous three months. Many studies have shown that mean HbA1c over a period of time correlates closely with the rate of appearance and progression of microvascular and neuropathic complications[7]. This correlation appeared in type 1 diabetics in the Diabetes Control and Complications Trial (DCCT)[8], and in type 2 diabetics in the United Kingdom Prospective Diabetes Study (UKPDS)[9].

Optimal care for many patients may require more frequent testing. In fact, the American Diabetes Association (ADA) recommends quarterly measurement of HbA1c in order to detect departures from metabolic control in a timely manner[10]. However, the relationship between HbA1c test frequency and glycemic control is complex due to variability in patient characteristics, the level of glycemic control desired and the treatment plan. Thus, this quality indicator is necessarily conservative in measuring performance of at least one HbA1c test during the reporting year.

2. HbA1c Control

This intermediate outcome measure assesses the percentage of patients that are in poor glycemic control (HbA1c >9.5%) or have a level of control unknown by the primary care physician, suggesting poor management of diabetic patients. Control is determined based upon the most recent HbA1c test result within the study period (1998).

As noted above, there is substantial evidence showing a direct relationship between HbA1c levels and the risk of microvascular complications. For every one percentage point reduction in the HbA1c test value in UKPDS, there was a 35% reduction in damage to the eyes, kidneys and nerves, and a 25% reduction in diabetes-related deaths[9].

Although standardization of all measurement of glycated hemoglobin to the HbA1c assay used in the DCCT is underway, various HbA1c assays were employed during the project baseline study period. According to DQIP, very few individuals should have an HbA1c value greater than 9.5% regardless of the test used or the condition of the patient.

3. Lipid Profile

This process measure assesses the percentage of diabetic patients who had a lipid profile performed within 1998. Hyperlipidemia is a major risk factor for macrovascular disease in diabetics[7], the greatest cause of diabetic mortality and expense. Type 2 diabetes, for instance, is associated with a two- to four-fold excess risk of coronary heart disease[10].

The ADA recommends adult diabetics undergo annual testing for lipid disorders with fasting serum cholesterol, triglyceride, high density lipoprotein cholesterol (HDL-C) and LDL-C measurements. The ADA also recommends reevaluation of lipid values following a macrovascular event.

4. **LDL-C Control**

This intermediate outcome measure assesses the percentage of diabetic patients with LDL-C within accepted risk levels (<130 mg/dL). Control is determined based upon the most recent LDL-C value obtained in 1998.

Studies demonstrate a direct relationship between LDL-C level and risk of myocardial events or mortality. LDL-C lowering has been shown to greatly reduce morbidity and mortality. According to the ADA position statement, "Management of Dyslipidemia in Adults with Diabetes," interventions to lower triglyceride levels and raise HDL cholesterol may be useful, but primary emphasis should be placed on lowering LDL-C levels.

5. Nephropathy Assessment

This process measure assesses the percentage of diabetes patients who have been screened for diabetic nephropathy at least once during 1998 via urinalysis or microalbuminuria testing (latter

only if indicated). This measure addresses whether health plans and providers are identifying high risk patients in terms of potential renal complications.

There is clear evidence that the presence of small amounts of protein in the urine (micro-albuminuria), which are not detectable by the usual dipstick method, identifies a subset of diabetic patients who are at significantly increased risk of coronary artery disease, sudden death, diabetic nephropathy and End Stage Renal Disease (ESRD). This subset of diabetics could benefit from treatment with angiotensin converting enzyme (ACE) inhibitors, which have proved to be effective in preventing nephropathy in patients with microalbuminuria[7].

The ADA recommends an annual urinalysis for adults with diabetes, followed by microalbuminuria testing if the urinalysis is negative for protein. Three screening methods are endorsed: measurement of the albumin to creatinine ratio in a random collection, 24-hour collection with creatinine and timed collection (e.g., 4-hour or overnight). A positive test for macroalbuminuria is acceptable, but a negative test for macroalbuminuria requires testing for microalbuminuria[10]. Cases in the baseline sample with a documented history of nephropathy per medical record review were excluded from the eligible cases for this measure (the denominator).

6. Dilated Eye Exam

This process measure assesses the percentage of diabetic patients receiving a dilated eye exam during 1998. It is acceptable for patients with diabetes to receive an eye exam within the past **two** years if any <u>two</u> of the following conditions are met: (1) patient is <u>not</u> taking insulin; (2) patient has an HbA1c <8.0% (according to most recent test result within study period); (3) patient did <u>not</u> have evidence of retinopathy on previous year's eye exam. This risk stratification scheme is utilized because screening strategies for diabetics depend on the rates of appearance and progression of retinopathy and on risk factors that alter these rates[10]. Because participating health care organizations preferred measuring performance of dilated eye exams within the past year only, cases meeting the criteria for biennial eye exams were excluded from calculation of the annual eye exam rate.

The exam in this measure must be performed by either an ophthalmologist or an optometrist. An acceptable alternative to the dilated eye exam is seven-field stereoscopic 30-degree fundus photography read by an optometrist or ophthalmologist.

Diabetes is the leading cause of blindness in the United States, and studies show that a periodic dilated eye exam is cost-effective in reducing the burden of diabetic retinopathy and blindness. The cost of screening for diabetic retinopathy is often less than the disability payments provided to people who would go blind in the absence of a screening program[10].

Sample Selection

In 1998, Medicaid managed care in North Carolina consisted of two Medicaid-risk health maintenance organizations (HMOs), a federally qualified health center and a primary care case management model called "Carolina Access." For the purpose of this project, the Division of Medical Assistance (DMA) in North Carolina subdivided the Carolina Access program into three

programs based on geography and management structure: "Carolina Access I," "Access II/III" and a subset of "Access II/III."

Each participating organization identified their diabetic members following the HEDIS 1999 Comprehensive Diabetes Care denominator specifications, resulting in a study population of diabetics enrolled in Medicaid managed care. Cases were eligible for project inclusion if they met the following criteria:

- Two face-to-face encounters with different dates of service in an ambulatory setting or non-acute inpatient setting or one face-to-face encounter in an acute inpatient or emergency room setting during 1998 with a diagnosis of diabetes (see Appendix for complete listing of acceptable ICD-9-CM diagnostic codes) per claims/encounter data.
- Enrolled as of December 31, 1998 with no more than one gap in enrollment of up to forty-five days during 1998.
- Between the ages of eighteen and seventy-five as of December 31, 1998.

According to sample size calculations, inclusion of 325 cases from each participating organization in both baseline and evaluation samples would allow for detection of a 10% absolute change from baseline to evaluation. With the exception of the Carolina Access I program, 100% of each organization's identified diabetic members were included in the baseline sample. A total of 1,178 diabetic cases were identified in the Carolina Access I (CA) program. Following collaborative discussions between MRNC and DMA, a random sample of 325 CA cases were selected for baseline study. MRNC oversampled by 10% to compensate for the possibility of missing records, etc., thereby increasing the number of CA cases to be sampled to 358. Under direction from DMA, MRNC restricted the sampling of CA cases to those counties with cases from Access II and III programs and from HMOs participating in the project so as to facilitate project data collection. The demographics of the CA sample are similar to that of its identified diabetic population in regards to age and gender; the sample is slightly over-represented by urban county of residence.

Project Data Collection

Demographic information for project cases was imported from managed care organization databases into an electronic data collection tool, which was developed to capture information on patient characteristics and care processes from primary care medical records. Specially trained nurses and health information management personnel employed by MRNC entered data into the tool during on-site medical record abstraction. Standard data reliability testing was performed, including intra- and inter-rater testing, to ensure accuracy and consistency in data collection.

RESULTS

Analyses were conducted at both the managed care plan level and for all participating Medicaid managed care organizations (Medicaid Aggregate) using SAS, a statistical software program[11]. All quality indicators are defined as proportions. Unless otherwise noted, the denominator used to calculate percentages is based on "n" (sample size) for your organization and for the aggregate. In some cases, missing values or exclusion criteria may change the denominator, making it smaller than "n." When this occurs, the new "n" will be indicated. Also, values were

rounded off to the nearest whole number, causing some totals to be slightly less than or greater than 100%.

Patient Descriptors

Table 1 provides demographic and medical history information for baseline samples specific to your organization and for the aggregate. At the Medicaid aggregate level, the majority of cases in the baseline study sample were African-American females between the ages of 45 and 64. Forty-nine percent of the aggregate baseline were prescribed insulin during 1998. Although history of coronary artery disease (CAD) did not appear to be prevalent in this study sample, many cases (52%) had a documented history of hypertension.

Table 1 : Patient Descriptors

	A (n=37)	B (n=192)	C (n=8)	D (n = 327)	E (n=215)	F (n = 41)	G (n=820)
Race							
African-American	30%	67%	75%	51%	67%	34%	57%
Caucasian	32%	20%	25%	37%	27%	56%	31%
Other	8%	3%	0%	4%	2%	2%	3%
Unknown	30%	10%	0%	8%	4%	7%	8%
Gender							
Male	8%	17%	25%	21%	19%	17%	19%
Female	92%	83%	75%	79%	81%	83%	81%
Age							
18 – 44	46%	51%	38%	35%	31%	44%	36%
45 - 64	54%	49%	63%	62%	65%	56%	59%
65 – 75	0%	0%	0%	3%	5%	0%	2%
Mean ± Std.	43.78 + 14.01	44.38 ± 11.54	46.88 ± 10.22	48.53 ± 12.28	49.05 ± 11.65	46.17± 10.27	47.35 ± 12.05
Medical History							
Insulin Use	32%	53%	38%	48%	51%	51%	49%
Current Smoker	27%	32%	0%	24%	26%	32%	27%
History of CAD*	16%	9%	0%	25%	19%	15%	19%
History of Non-traumatic LEA**	5%	4%	0%	3%	4%	2%	3%

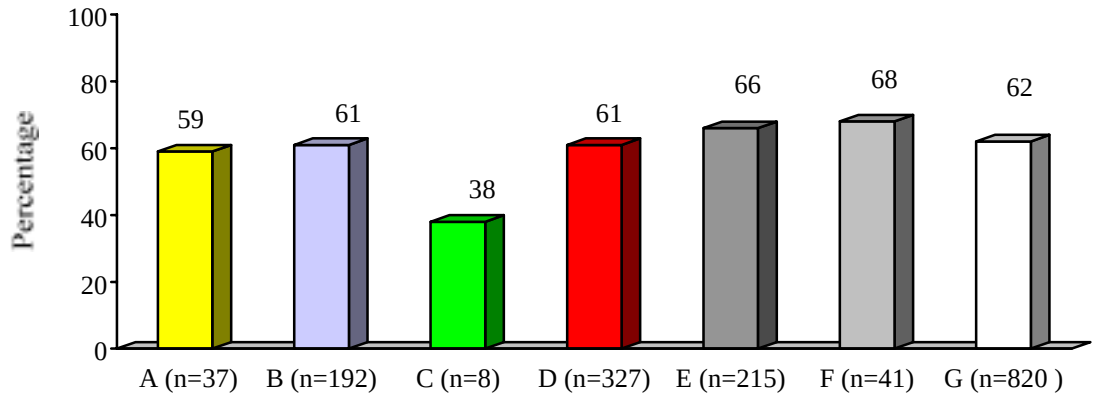
*CAD denotes Coronary Artery Disease

**LEA denotes Lower Extremity Amputation

Quality Indicators

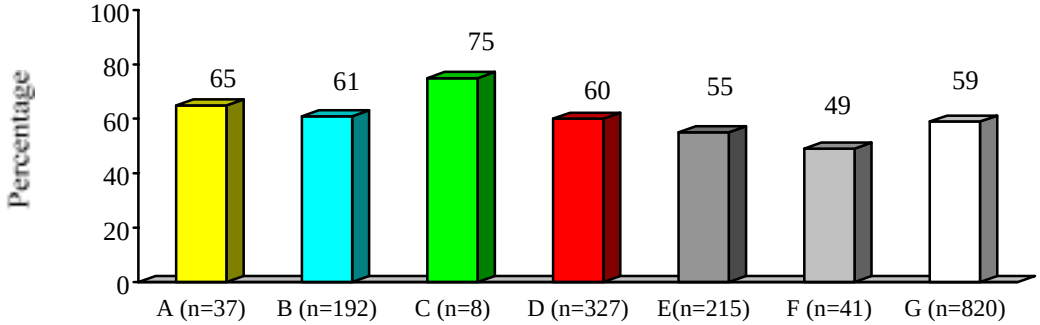
The following figures depict baseline performance on the six project quality indicators.

Figure 1: HbA1c Tested in 1998



Although 62% of baseline cases received at least one HbA1c test in 1998, 59% are considered to be in poor control, defined as having most recent HbA1c value greater than 9.5% or having an unknown level of HbA1c (i.e., no HbA1c test performed in 1998). Of those considered to be in poor glycemic control, 169 cases had HbA1c greater than 9.5%, while 313 cases had no HbA1c test in 1998.

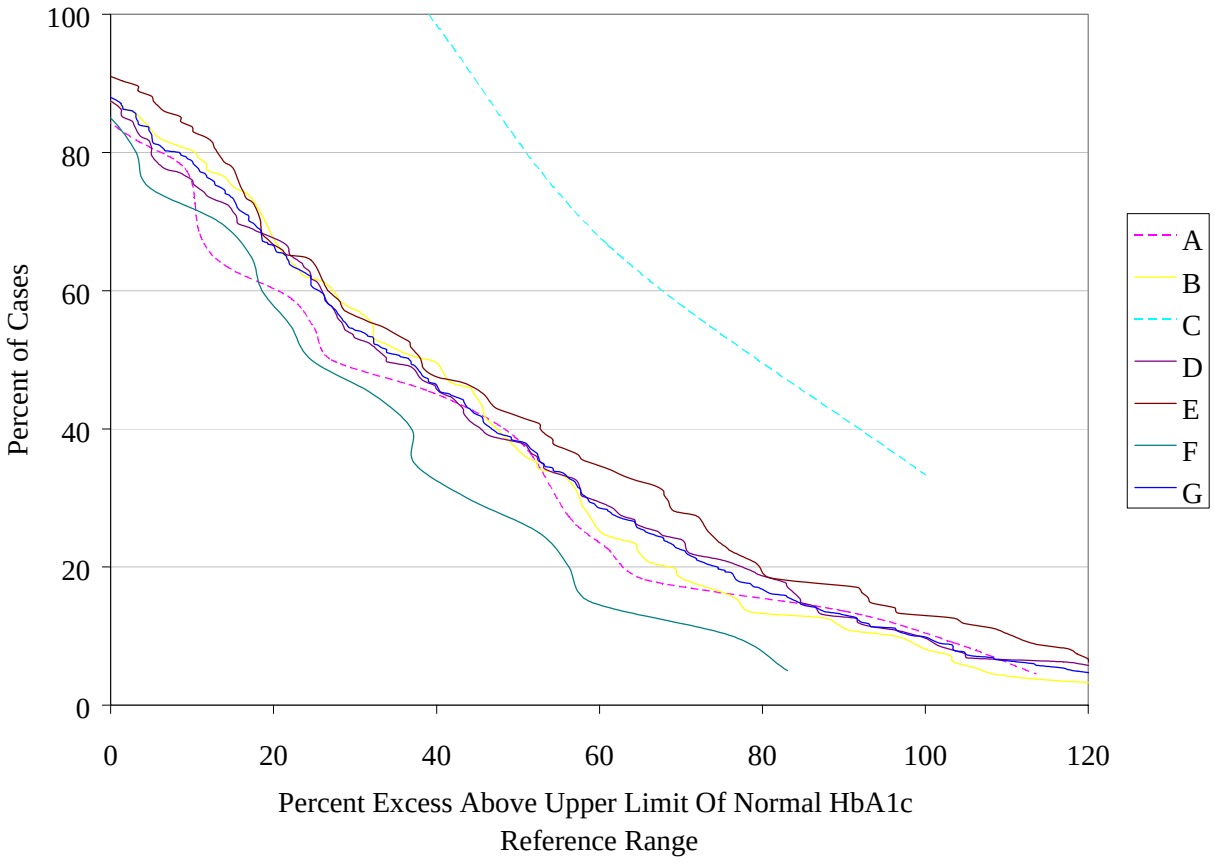
Figure 2: Poor Glycemic Control*



* Poor control if HbA1c >9.5% or unknown.Excludes cases where lab normal reference range is unknown.

To provide additional information, perhaps more useful to practicing physicians, the percentage of cases in the baseline sample with HbA1c values above laboratory-specific normal reference ranges is displayed in a continuous format in **Figure 3**. This analysis represents an alternative approach to circumvent the lack of standardized HbA1c testing in North Carolina in 1998. Information depicted in **Figure 3** facilitates greater understanding of glycemic control in the baseline sample by accounting for the use of various HbA1c assay methods.

Figure 3: HbA1c Above Lab-specific Normal Reference Range*



*Excludes cases where lab normal reference range is unknown.

Figure 4: Lipid Profile in 1998

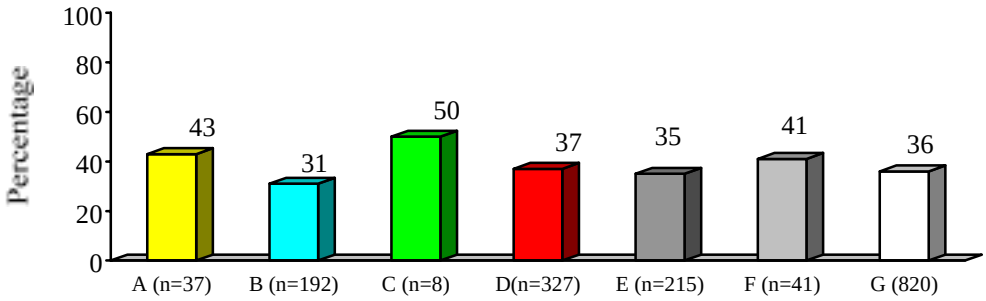
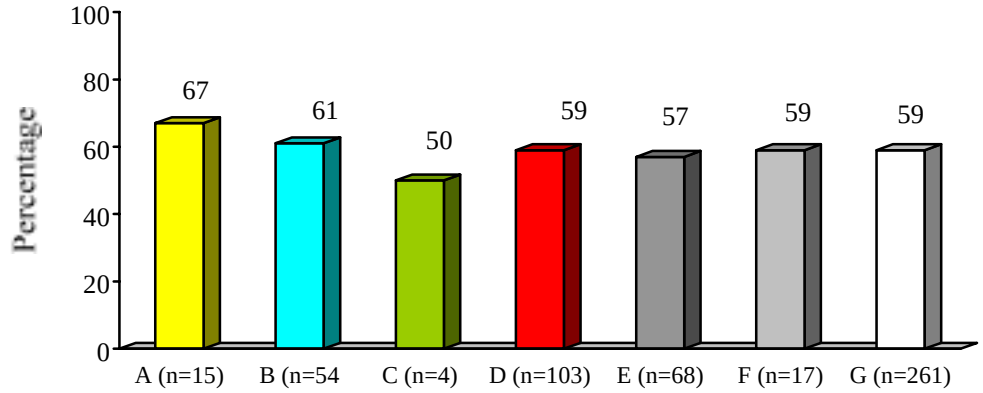


Figure 5: LDL-C Controlled to <130 mg/dL

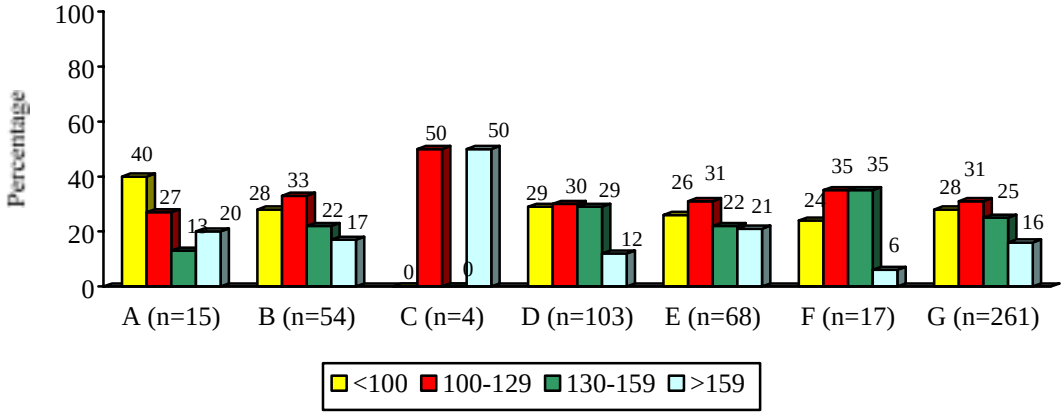


*For patients with lipid profiles in 1998.
Excludes cases with no LDL measurement.

While 59% of the baseline sample had LDL-C within accepted risk levels, **Figure 6**, which depicts the complete distribution of LDL-C values reported in 1998 for the sample, shows that 29% had LDL-C controlled to the ADA-recommended optimal level.

ADA recommendations for treatment of elevated LDL-C: For patients without previous coronary heart disease (CHD), the goal for LDL-C is <130 mg/dL (3.35 mmol/L); the initiation level for pharmacologic therapy is also set at a LDL-C level ≥130 mg/dL. Optimal LDL-C levels for adults with diabetes, especially those with preexisting CHD, are <100 mg/dL (2.60 mmol/L)[10]. These guidelines were formed based on opinions of the National Cholesterol Education Program Expert Panel[12]. They are based not only on the high incidence of CHD in patients with diabetes, but also on their higher case fatality rate once they have CHD[10].

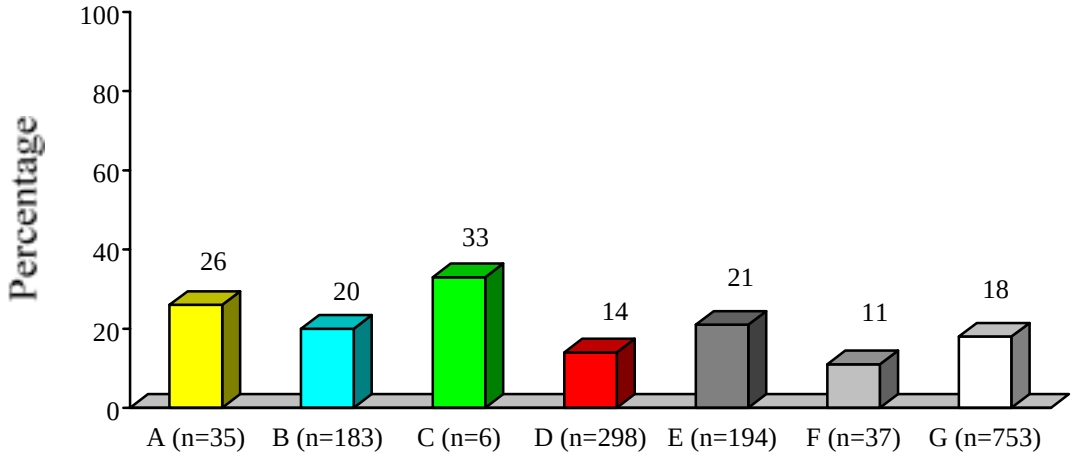
Figure 6: Distribution of LDL-C Values*



*LDL-C value abstracted from most recent test in 1998.

Figure 7 indicates that only 18% of the aggregate baseline sample was screened adequately for nephropathy in 1998. As stated previously in this report, annual urinalysis is recommended for adults with diabetes, followed by microalbuminuria testing if the urinalysis is negative for protein.

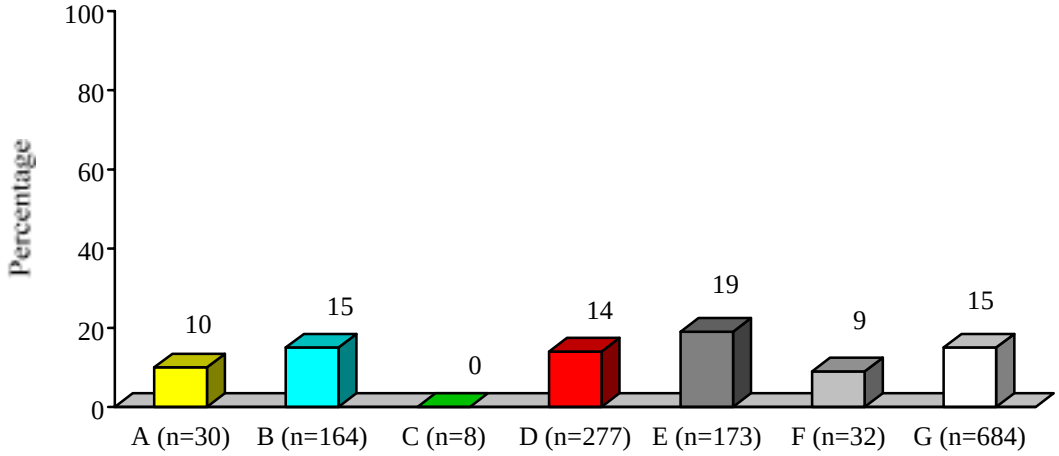
Figure 7: Nephropathy Assessment in 1998*



*Microalbuminuria test or positive macroalbuminuria test in patients with no history of nephropathy.

A small percentage (15%) of cases in the aggregate baseline sample received a dilated eye exam during 1998. Information provided in **figure 9** may help in prioritization of interventions directed towards physicians and patients.

Figure 8: Dilated Eye Exam in 1998*



* Excludes patients with 2 of the following: not currently on insulin, no evidence of retinopathy in 1997, HbA1c <8%.

Figure 9: PCP Recommendation for Dilated Eye Exam

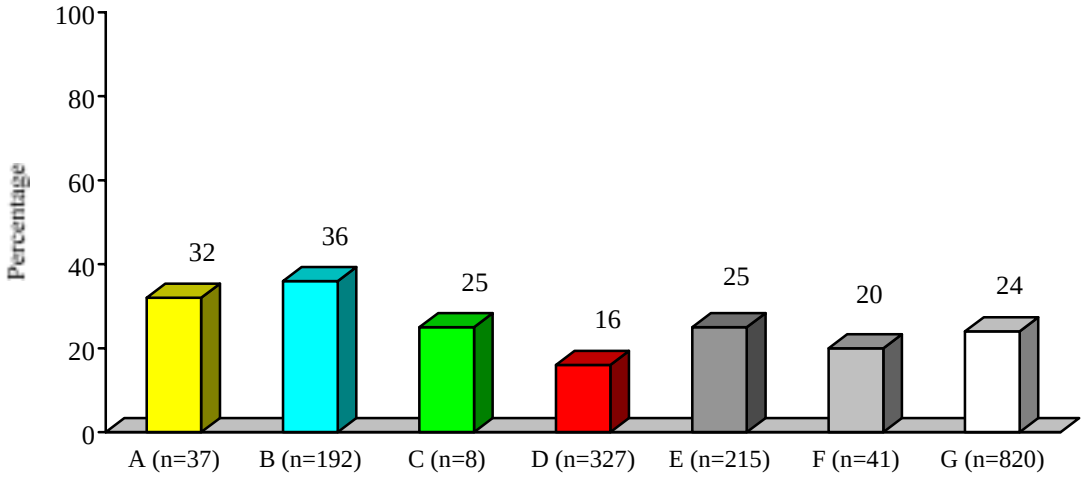


Figure 9 shows that approximately 24% of the aggregate baseline sample received a recommendation from their primary care physician (PCP) regarding the need for a dilated eye exam.

CONCLUSIONS

This report established baseline rates of performance on intermediate outcomes and processes of care related to diabetes management in primary care. Many opportunities for improvement have been detailed in this report. Because early detection of complications in diabetes can lead to

early intervention and treatment, improving performance on the Managed Care Diabetes Project quality indicators may reduce long-term costs to participating organizations by reducing diabetes related morbidity. The high morbidity and mortality associated with the complications of diabetes can be prevented through timely and aggressive management of the disease.

While the primary care physician can be held accountable for ordering HbA1c tests, lipid profiles, and urinalyses or microalbuminuria tests, the dilated eye exam does present somewhat of a challenge. Although, there are real barriers to including dilated eye exams into primary care encounters, primary care physicians can have a significant impact on diabetic eye care by discussing eye care with their diabetic patients. According to a December 1999 press release from the National Institutes of Health, patient education leads to more eye exams in groups at risk for diabetic eye disease[13].

Table 2: Percentage of Cases Meeting Quality Indicators

Quality Indicator	A		B		C		D		E		F		G	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Hemoglobin (HbA1c) Testing	37	59	192	61	8	38	327	61	215	66	41	68	820	62
Poor HbA1c Control	37	65	192	61	8	75	327	60	215	55	41	49	820	59
Lipid Profile	37	43	192	31	8	50	327	37	215	35	41	41	820	36
LDL Cholesterol (LDL-C) Control	15	67	54	61	4	50	103	59	68	57	17	59	261	59
Nephropathy Assessment	35	26	183	20	6	33	298	14	194	21	37	11	753	18
Dilated Eye Exam	30	10	164	15	8	0	277	14	173	19	32	9	684	15

Improvement Plans

The information contained in this report is provided as a tool and an incentive for improvement. After reviewing this baseline report, an improvement plan should be developed that addresses the care delivered to diabetic members within your organization (as outlined by the quality indicators). This plan should consider participating providers' practice styles and opinions, and should be incorporated into continuous quality improvement activities. The improvement plan should be submitted to MRNC along with the completed "**Participation Response Form**" within 30 days (**by April 10, 2000**). It is suggested that the following components be included in your plan:

- Identification of the variation(s) to be addressed and the underlying cause of the variation(s)
- Description of the specific procedure, process, or system that will be modified or instituted to achieve improvement
- Description of how improvement is to be measured and establishment of criteria to evaluate the effectiveness of the plan
- Time-frame for initiating and completing the improvement plan
- Description of the expected outcome of the improvement plan
- Description of the protocol and personnel responsible for establishing compliance with the plan

Notification of improvement plan receipt and approval will be communicated in writing to each participating managed care organization. Improvement plans will be reviewed by MRNC's Principal Clinical Coordinator, Ross J. Simpson, Jr., MD, Ph.D., and evaluated based on the following criteria:

- Inclusion of suggested components
- Feasibility of implementation
- Potential for improving rates of compliance with the clinical recommendations

MRNC will evaluate improvement plan/project intervention effectiveness by abstracting medical record data from diabetic members receiving care in calendar year 2000. Thus, all improvement activities must be implemented as early as possible in the year 2000. Project success will be measured by improvement over baseline performance on the project quality indicators. The goal for Medicaid organizations is to improve aggregate quality indicator performance by 10%.

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APPENDIX

ICD-9-CM Codes

250.00 Type 2 diabetes mellitus (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) without mention of complication.*
250.01 Type 1 diabetes mellitus (insulin dependent, juvenile type, not stated as uncontrolled) without mention of complication.
250.02 Type 2 diabetes mellitus (non-insulin dependent, adult-onset or unspecified type, uncontrolled) without mention of complication.*
250.03 Type 1 diabetes mellitus (insulin dependent, juvenile type, uncontrolled) without mention of complication.
250.10 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with ketoacidosis.*
250.11 Type 1 diabetes (insulin dependent, juvenile type, not stated as uncontrolled) with ketoacidosis.
250.12 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with ketoacidosis.*
250.13 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with ketoacidosis.
250.20 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with hyperosmolarity.*
250.21 Type 1 diabetes (insulin dependent, juvenile type, not stated as uncontrolled) with hyperosmolarity.
250.22 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with hyperosmolarity.*
250.23 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with hyperosmolarity.
250.30 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with other coma.*
250.31 Type 1 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with other coma.
250.32 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with other coma.*
250.33 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with other coma.
250.40 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with renal manifestations.*
250.41 Type 1 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with renal manifestations.
250.42 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with renal manifestations.*
250.43 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with renal manifestations.
250.50 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with ophthalmic manifestations.*
250.51 Type 1 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with ophthalmic manifestations.
250.52 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with ophthalmic manifestations.
250.53 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with ophthalmic manifestations.

250.60 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with neurological manifestations.*
250.61 Type 1 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with neurological manifestations.
250.62 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with neurological manifestations.*
250.63 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with neurological manifestations.
250.70 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with peripheral circulatory disorders.*
250.71 Type 1 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with peripheral circulatory disorders.
250.72 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with peripheral circulatory disorders.*
250.73 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with peripheral circulatory disorders.
250.80 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with other specified manifestations.*
250.81 Type 1 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with other specified manifestations.
250.82 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with other specified manifestations.*
250.83 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with other specified manifestations.
250.90 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with unspecified complication.*
250.91 Type 1 diabetes (non-insulin dependent, adult-onset or unspecified type, not stated as uncontrolled) with unspecified complication.
250.92 Type 2 diabetes (non-insulin dependent, adult-onset or unspecified type, uncontrolled) with unspecified complication.*
250.93 Type 1 diabetes (insulin dependent, juvenile type, uncontrolled) with unspecified complication.
357.2 Polyneuropathy in diabetes
357.3 Background diabetic retinopathy
362.01 Proliferative diabetic retinopathy
366.41 Diabetic cataract
648.0 Pregnancy with pre-existing diabetes

* The following 5th digit subclassification is for use with category 250: a 5th digit 0 or 2 is used for Type 2 diabetic patients even if the patient requires insulin.

Abstraction Tool

MANAGED CARE ABSTRACTION TOOL

Downloaded Claims Information

Member ID# _____
SSN: _____
Name _____
Primary Care Physician Information: _____
_____

Member Demographics (If downloaded value does not match medical record, enter correct data.)

Birth date: _____
Gender: ____ Male _____ Female _____Unknown
Race: _____ Caucasian/White _____African-American/Black _____Hispanic/Chicano/Cuba
_____ American Indian/Alaska Nati ____Asian _____Other ____ Unknown

Medical History (Abstract YES if patient has documented history of the element.)

Coronary Artery Disease	_____ Yes	_____ No
Hypertension	_____ Yes	_____ No
Nephropathy	_____ Yes	_____ No
Peripheral Vascular Disease	_____ Yes	_____ No
Neuropathy	_____ Yes	_____ No

Non-traumatic Amputation: _____ Unilateral
_____ Bilateral
_____ None

Smoking Status: _____ Current
_____ Past
_____ Never
_____ Unknown

Quality Indicators: (Abstract the date and values from the most recent lab or exam.)

	Date	Unit	Reference Range	Notes
HbA1c	____	___ % ___:mol/L ___UTD	_____	_____

	Date
Microalbuminal date	____

	Date	Value
Urinalysis	____	__ Negative ___ Trace ___ +1 ___+2 ___+3 ___+4 ___ Unknown

	Date	LDL Value
Lipid Profile date:	____	_____
Referral to Eye Care Professional:	_____	
Eye Exam date:		

Retinopathy: ___Yes ___ No ___ Unknown

Insulin Use ___Yes ___No

	Date	Systolic Value	Diastolic Value
Blood Pressure	_____	_____	_____

Feet Inspection date: _____

Pedal Pulses date: _____

Sensory Exam date: _____

Project Team

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